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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,660	09/27/2006	Minoru Ito	52433/863	1634

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EXAMINER	
YANG, JIE	
ART UNIT	PAPER NUMBER
1793	
MAIL DATE	DELIVERY MODE
08/27/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,660	ITO ET AL.	
	Examiner	Art Unit	
	JIE YANG	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/25/2010 has been entered.

Status of claims

Claims 1-4 have been amended; claim 5 is cancelled; and claims 1-4 remain for examination. Claim 1 is an independent claim.

Claim Objections

Claims 2-4 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. For the instant case, all of the limitations in the instant claims 2-4 have been included in the independent claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Minoru et al (JP 2003-313628 A, thereafter JP'628).

Regarding claim 1, JP'628 teaches a steel product having superior toughness in a HAZ (Heat-affected zone) (abstract of JP'628) with the vE_{-40} (J) measurement (Table 2 of JP'628) for thick plate application (Example in paragraph [0079] of JP'628), which read on the limitation of a high-strength thick steel plat excellent in low temperature toughness at heat affect zone result from large input welding as recited in the instant claim. The composition comparison between the alloy of JP'628 and the alloy of the instant invention is listed in the following table. All of the composition ranges disclosed by JP'628 (abstract, table 1, and claims 1-3 of JP'628) overlap the composition ranges as recited in the instant claim, which is a prima facie case of obviousness. SEE MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the

invention was made to select the claimed compositions of C, Si, Mn, P, S, Al, N, Ni, Ti, Nb, and Fe, and optionally adding Mg, REM, B, Cr, Mo, V, and Cu to the alloy of JP'628 because JP'628 discloses the same utility throughout the disclosed ranges.

Element	From instant Claim 1 (in wt%)	JP'628 (in wt%)	Overlapping range (in wt%)
C	0.03-0.14	0.03-0.18	0.03-0.14
Si	0.30 or less	0.5 or less	0.30 or less
Mn	0.8-2.0	0.4-2.0	0.8-2.0
P	0.02 or less	0.02 or less	0.02 or less
S	0.005 or less	0.02 or less	0.005 or less
Al	0.001-0.040	0.005-0.07	0.005-0.04
N	0.0010-0.0100	0.0005-0.007	0.001-0.007
Ni	0.8-4.0	0.6-4.0	0.8-4.0
Ti	0.005-0.030	0.005-0.03	0.005-0.03
Nb	0.003-0.040	0.005-0.10	0.005-0.04
Fe	Balance	Balance	Balance
	optionally		
At least one of	Mg: 0.0003-0.0050; REM: 0.001-0.030	Mg:0-0.0050; REM:0-0.100	Mg: 0.0003-0.0050; REM: 0.001-0.030
At least one of	B: 0.0005-0.0050; Cr:0.1-0.5; Mo:0.01-0.5; V:0.005-0.10; Cu:0.1-1.0	B: 0.0005-0.0030; Cr:0-0.6; Mo:0-0.6; V:0-0.1; Cu:0-1.0	B: 0.0005-0.0030; Cr:0.1-0.5; Mo:0.01-0.5; V:0.005-0.10; Cu:0.1-1.0

Regarding the equation [1] in the instant claim 1, which is fully depends on the alloy's compositions, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D.357, 553 O.G.177; 57 USPQ 117,

Taklatwalla v.Marburg. 620 O.G.685, 1949 C.D.77, and In re Pilling, 403 O.G.513, 44 F(2) 878, 1931 C.D.75. In the instant case, in the absence of evidence to the contrary, the selection of the proportions of elements: Ni, Mn, C, Cr, Mo, V, and Cu from JP'628 in order to meet the claimed equation would appear to require no more than routine investigation by those ordinary skilled in the art. In re Austin, et al., 149 USPQ 685, 688. The Examiner further note that if choosing the sample number 1 from the table 1 of JP'628 for calculation, sample 1 has major composition ranges within or close to the claimed composition ranges, the calculated Ceq is about 0.37, the calculated Ni/Mn is about 1.02, and the sample 1 meets the requirement of equation [1]. JP'628 teaches oxygen included particles in the number 100-3,000 pieces/mm^2 with circle-equivalent particle sizes of 0.005-2μm (Abstract of JP'628), which reads on the limitation of at least 100/mm^2 of oxide particles and overlapping the circle-equivalent diameter range of 0.005 to 0.5μm as recited in the instant claim. JP'628 teaches adding 0.0005-0.0050wt%Ca in the alloy, which is within the Ca range 0.0003-0.0050wt% as recited in the instant specification (Page 13, lines 21-26 of the instant specification). Because JP'628 teaches the similar

essential elements in the alloy, the alloy of JP'628 meets the requirement of "consisting of" in the instant claim.

Regarding claims 2-4, all of the limitations have been included in the instant independent claim 1, refer to the rejection for instant claim 1 as above, claims 2-4 are obvious over JP'628.

Response to Arguments

Applicant's arguments filed 6/25/2010 have been fully considered but they are not persuasive. Regarding the arguments related to the amended features in the instant claims, the Examiner's position has been stated as above.

In the remarks filed on 6/25/2010, the Applicant argues that JP'628 discloses Ca from 0.0005 to 0.0050wt%, which is a necessary element and not an unavoidable impurity, which contrary to the instant claim 1 because "consisting of" language excludes Ca from the instant alloy. In response, the Examiner notes that although claim 1 does not include Ca, the effect of Ca has been disclosed in the instant specification (Page 13, lines 21-26 of the instant specification). The composition range of 0.0005-0.0050wt%Ca in the alloy as taught by JP'628 is within the Ca range 0.0003-0.0050wt% as recited in the instant specification. Table 1 of the instant specification includes alloys with and without Ca. The Applicant has not provided any evidence to show the criticality of excluding Ca from the alloy.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY
/Jie Yang/